Yashobhoomi convention centre, Dwarka, New Delhi

BES team practical design solutions has helped successful implementation of large & complex Facade works

Yashobhoomi Convention & Expo Centre is one of Asia's largest facilities. It has 2 Exhibition halls and 1 convention centre including, Hotels, Arena for 20,000 People capacity. Each building block has its elegant elevations and various façade system types.

BES has been appointed by the EPC contractor (L&T) for the detailed engg and designs for Exhibition Halls 1 and 2, as well as the Convention Centre. The project involves highly challenging designs due to large spans, complex steel building frames, and many different facade systems & materials. BES team has prepared detailed designs & Engg for construction. BES team were deeply involved in design, site coordinations, resolving construction challenges, attending meetings and closely helping in design approvals and smooth progress of site works.

BES Scope of Services (all facades)

- Facade Engineering, Detailed Design Development & Construction Designs
- Site phase design co-ordination and design management
- Factory Inspections, mock-ups verifications
- Performance Mock-ups witness
- Periodical Site Inspections

Project Details :

Client :	L&T Construction
Architect :	IDOM / CP KUKREJA
Status:	Completed Year 2024

GRC -One of Large Application

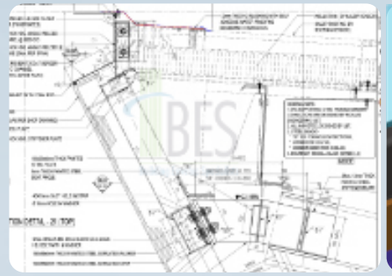
Technical Details

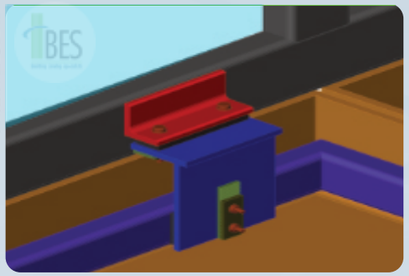
One of large GRC application, more than 90,000 Sqm GRC cladding has been used. Consists of various shapes, sizes, fixings resulted in greater design challenges, BES has prepared well resolved detailed design interfaced with main steel works.

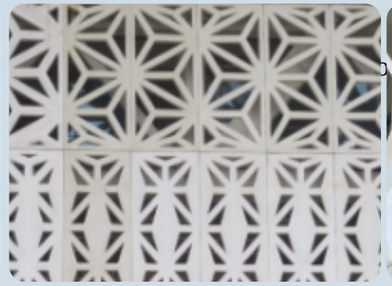
BES scope includes

- Engg of secondary steel works supporting GRC
- Design of brackets and fixings of GRC
- Design of GRC Interface details with Roof and facades
- Preparation of GFC drawings for typical, Non-Typical and interfaces
- Resolve site challenges and design management

Shape	Typical Size
3d shaped	1.2 m x 3 m
Screen / Jalli	2 x 3m
Flat ceiling panel	1.5x4.5







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Technical Overview

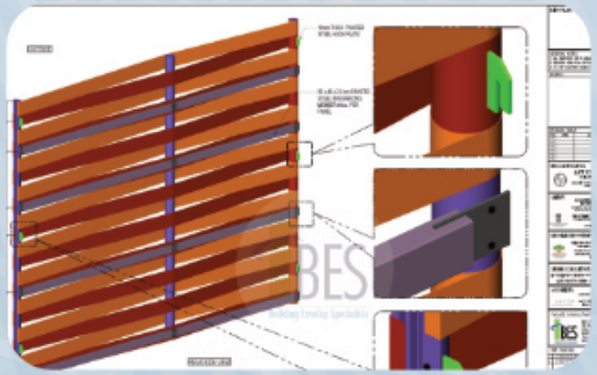
Following technical overview of this unique screen designs.

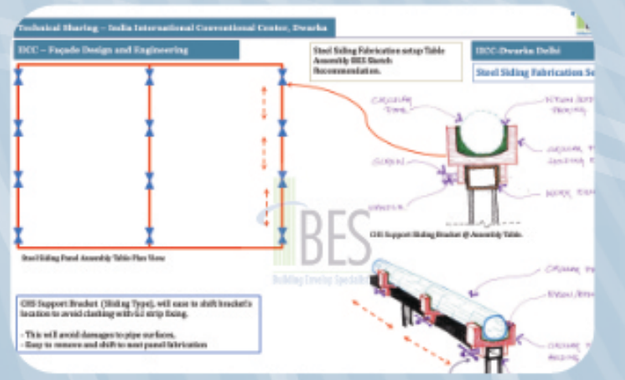
- Thin copper strips are rolled on to circular Hollow steel profiles
- Pre-fabricated modular units, erected at site using bolt connections
- Each module approx. 6M tall x 3M wide
- Vertical members have provisions of interlocking to next module.
- All fixings are concealed to have seamless ribbon effect

Ribbon Cladding Using Copper Strips

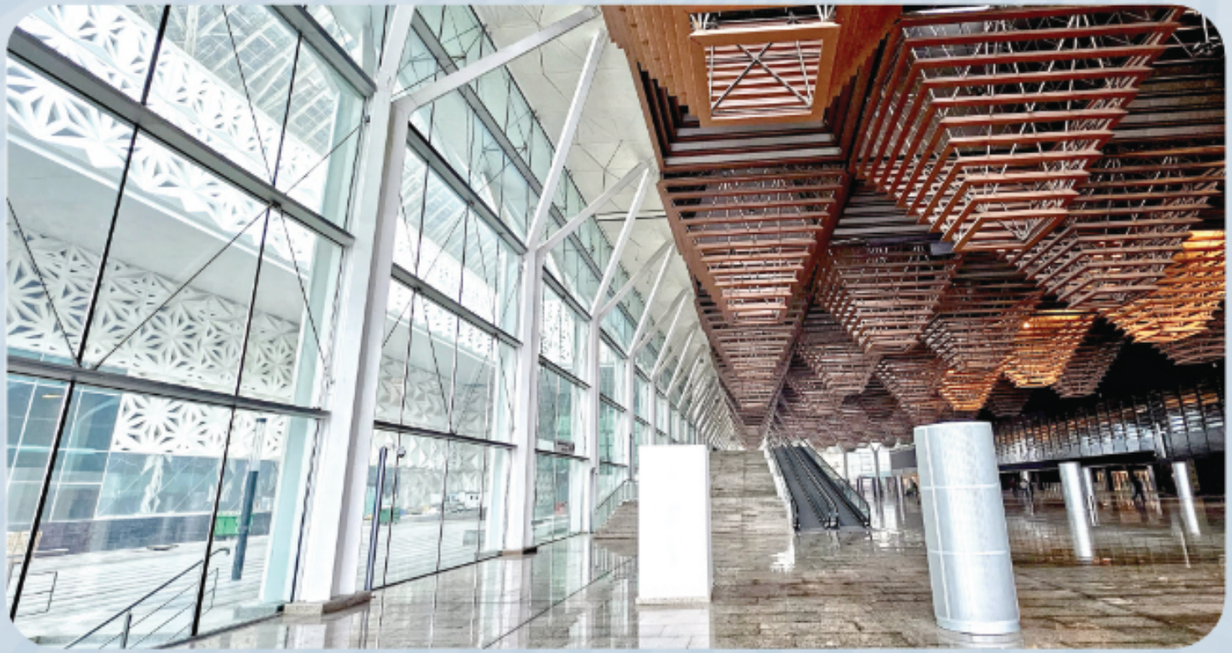
Fabrication & Installation Challenges

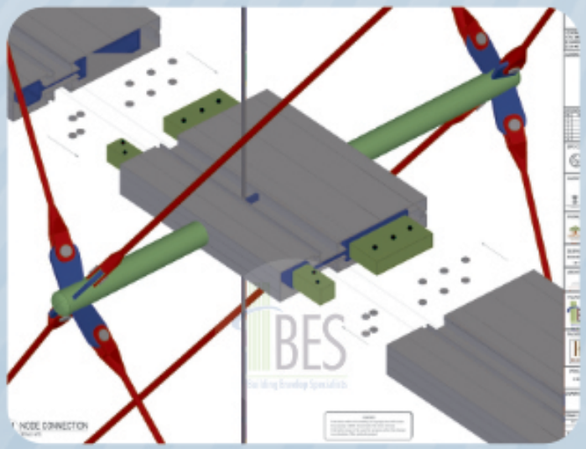
Copper strips are supplied in coil, need to be unrolled, and follow woven techniques and pre-tensions. This requires a customised fabrication set-up. BES team has helped the fabricator with the appropriate set-up and fabrication methods. BES team was deeply involved at the fabrication yard, and tested with mockups. This has helped the fabricators towards successful completion.

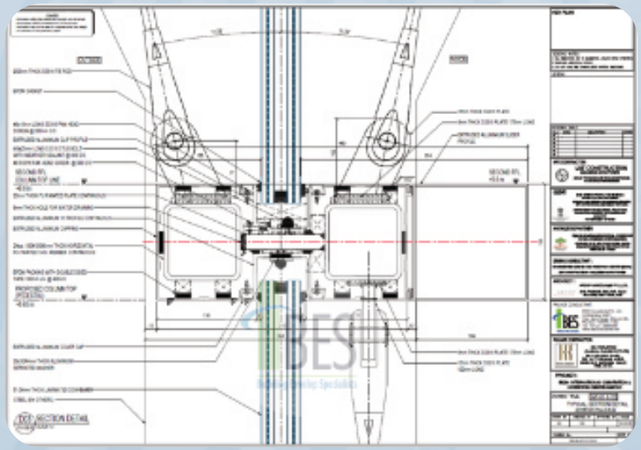



Technical Sharing – India International Convention Center, Dwarka
IICC – Façade Design and Engineering
Steel Siding Fabrication setup Table Assembly IICC Sketch Recommendation.
IICC-Dwarka Delhi
Steel Siding Fabrication Se
Steel Siding Panel Assembly Table Plan View
GSS Support Bracket @ Assembly Table.
GSS Support Bracket (Sliding Type), will ease to shift bracket's location to avoid clashing with G2 strip fixing.
- This will avoid damages to pipe surfaces.
- Easy to remove and shift to next panel fabrication

Hybrid Tension Glazing System







Unique hybrid structural system uses tension rods and slim horizontal members, without vertical framing. Large and heavy glass units are effortlessly supported by this advanced engineering design solution.

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Technical Challenges

- BES team has used advanced Engineering skills and software to design a Non Linear light weight tension structure.
- Floating steel beam at 9M level runs continuous on top of main steel columns.
- Large glass panel sizes, 2x3.3M laminated DGU
- Connections to allow large tolerances
- Designed for Seismic zone as per NBC

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